

# Work Order ID 53649

November 11, 2009 3:02:20 PM



Page 1

Item ID: D206-667-203TRN

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Turning Detail

Start Date: 11/11/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 24/11/2009 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan:   *PL*   Date: 09-11-11 Tooling:                      Date:                       
QC:                      Date:                      SPC (Y/N):                      Date:                     

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D206-667-243	Rev C

100	MORI SEIKI CNC LATHE LARGE	0.00							
	Mori Seiki								
	Memo	0.00							
Mori Seiki CNC Lathe Large	1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA089□2-Turn first side as per Folio FA089□3-File down transition lines smooth.								

*A.M.* 09-11-18①

110	QC1- Inspect dimensions to dimension sheet	0.00							
	QC								
	Memo	0.00							
Quality Control									

*A.M.* 09-11-18①

120	MORI SEIKI CNC LATHE LARGE	0.00							
	Mori Seiki								
	Memo	0.00							
Mori Seiki CNC Lathe Large	1-Turn second side as per Folio FA089□2-File down transition lines smooth. □ 3-Remove sand and plugs□4-Scrib part# and batch #								

*A.M.* 09-11-18①

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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	QC1- Inspect dimensions to dimension sheet	0.00							
QC	Memo	0.00							
Quality Control									
140	QC8- Inspect parts - second check	0.00							
QC	Memo	0.00							
Quality Control									
150	Crosstubes Chemical Conversion	0.00							
HandFXtube	Memo	0.00							
Hand Finishing Crosstubes									

a.m 09-11-18

1 - - AWM 9-11-19

1 - - AWM 9-11-19

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Item ID: D206-667-203TRN

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Turning Detail

Start Date: 11/11/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 24/11/2009 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	QC3- Inspect Part Finish	0.00							
QC	Memo	0.00							
Quality Control									
170	Packaging	0.00							
Packaging	Memo	0.00							
Packaging	Identify and Stock in kanban rack <input type="checkbox"/> Location: <u>X-TUBE CELL</u>								
180	QC21- Final Inspection - Work Order Release	0.00							
QC	Memo	0.00							
Quality Control									

1 11/11/19

1 - 11/11/19

09/11/19  
11/09-11-19

# Picklist Print

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Page 1

Work Order ID: 53649



Parent Item: D206-667-203TRNRevC



Parent Item Name: Crosstube Turning Detail

Start Date: 11/11/2009

Required Date: 24/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D6004-115RevA		Manufactured	No			100	Each	68.0000	1.0000			

Crosstube Material

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
LG	68	
34685	17	
34774	21	
38336	30	

AWM 9-11-12 ①

<b>DART AEROSPACE LTD</b>	<b>Work Order:</b> 53649
<b>Description:</b> Crosstube Assembly	<b>Part Number:</b> D206-667-243
<b>Inspection Dwg:</b> D206-667-243 <b>Rev:</b> B	<b>Page 1 of 1</b>

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article
 ☐ Prototype

Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.490	+0.005/-0.000	2.490	/		
	2.018	+0.005/-0.000	2.023	/		
	2.079	+0.005/-0.000	2.084	/		
	2.145	+0.005/-0.000	2.150	/		
	2.209	+0.005/-0.000	2.214	/		
	2.287	+0.005/-0.000	2.291	/		
	2.363	+0.005/-0.000	2.365	/		
	2.433	+0.005/-0.000	2.438	/		
	0.200	+/-0.010	0.200	/		
	0.500 x 30°	+/-0.010	0.500x30°	/		
	R0.063	+/-0.010	R0.063	/		
	R0.500	+/-0.010	R0.500	/		
	4.438	+/-0.030	4.438	/		
SIDE B	104.91	+/-0.020	104.910	/		
	2.490	+0.005/-0.000	2.490	/		
	2.018	+0.005/-0.000	2.023	/		
	2.079	+0.005/-0.000	2.084	/		
	2.145	+0.005/-0.000	2.150	/		
	2.209	+0.005/-0.000	2.214	/		
	2.287	+0.005/-0.000	2.291	/		
	2.363	+0.005/-0.000	2.365	/		
	2.433	+0.005/-0.000	2.438	/		
	0.200	+/-0.010	0.200	/		
	0.500 x 30°	+/-0.010	0.500x30°	/		
	R0.063	+/-0.010	R0.063	/		
	R0.500	+/-0.010	R0.500	/		
	4.438	+/-0.030	4.438	/		

<b>Measured by:</b> O.M.	<b>Audited by:</b> AWM	<b>Prototype Approval:</b>	N/A
<b>Date:</b> 09.11.18	<b>Date:</b> 9-11-19	<b>Date:</b>	N/A

Rev	Date	Change	Revised by	Approved
A	06.09.01	New Issue (P/O D206-667-203)	KJ/JLM	

Item	Qty	Part Number	Description
	-243		
1	X	D206-667-243	CROSSTUBE ASSEMBLY (206L HIGH AFT)
2	1	D6004-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2892-1	SUPPORT
6	4	D3595-063-450	RUBBER CUSHION
7	4	MS21920-22	CLAMP
8	14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299- 947-100, TYPE II, CLASS 2 ADHESIVE)

#### GENERAL NOTES:

- MATERIAL: MANUFACTURED FROM D6004-115  
FINISHED LENGTH = 104.91±0.020
- FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-243" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- WEIGHT: 21.9 lbs
- PART IS SYMMETRIC ABOUT CENTERLINE.
- RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- INSTALL D2892-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- INSTALL MS21920-22 CLAMPS WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE D2892-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

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SUBJECT TO APPROVAL  
WITHOUT NOTICE  
WORK ORDER  
NO. 53649

*BT 09-11-11*

**RELEASED**  
*8/11/11*

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-450 WAS D2856-400-773 (ZN D6-2 & A5-2); REMOVED REF. & ADD TOLERANCES (ZN 4-3, C5-3, D3-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>90</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA DRAWING NO. REV. C D206-667-243 SHEET 1 OF 4 TITLE SCALE CROSSTUBE ASS'Y (206L HIGH AFT) NTS	
DRAWN	RF		
CHECKED	<i>90</i>		
MFG. APPR.	<i>90</i>		
APPROVED	<i>90</i>		
DE APPR.	<i>90</i>		
DATE	08.11.06	<small>COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

W/O 53649  
u

RELEASED  
6/11/12 MP

- [12] D2892-1 SUPPORT  
2 PL
- [15] MS21920-22 CLAMP  
4 PL
- [13] D3595-063-450  
RUBBER CUSHION  
4 PL, (UNDER CLAMP)

10.03

D206-667-603

**D206-667-243**  
**ASSEMBLY DETAIL**  
(VIEW LOOKING FWD)

D2873-043  
NUT PLATE

MS20601AD4W10  
RIVET, 4 PL

D2873-045  
NUT PLATE

MS20601AD4W10  
RIVET, 3 PL

**VIEW A-A:**  
**CUFF DETAIL**  
SCALE 4X

FWD

[13] [15]  
MS21920-22 CLAMP REF

[12]  
D2892-1 SUPPORT REF

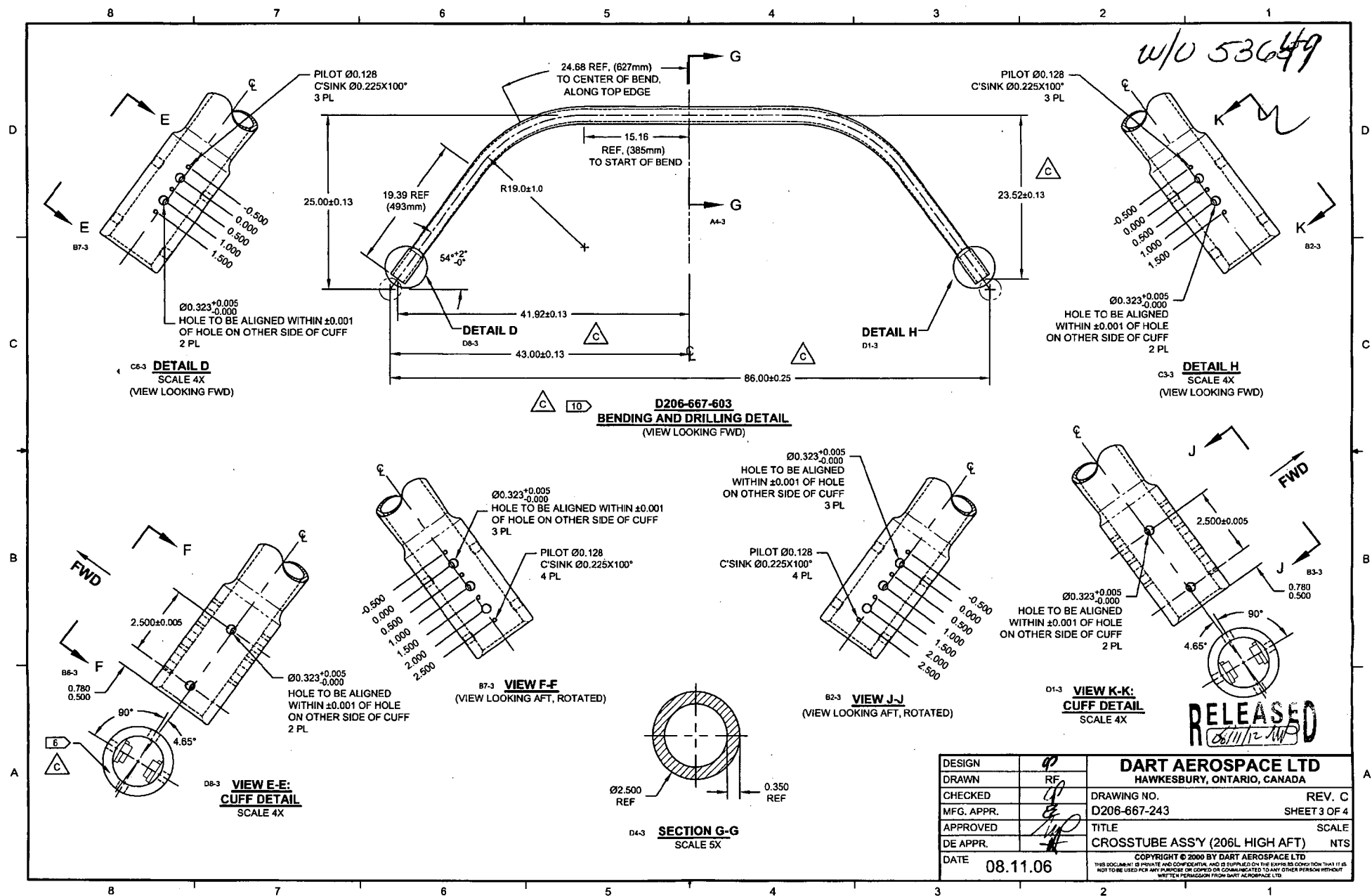
[13] [15]  
D3595-063-450  
RUBBER CUSHION  
REF

**SECTION B-B**  
SCALE 5X

- D2873-043  
NUT PLATE
- MS20601AD4W10  
RIVET, 4 PL
- D2873-045  
NUT PLATE
- MS20601AD4W10  
RIVET, 3 PL

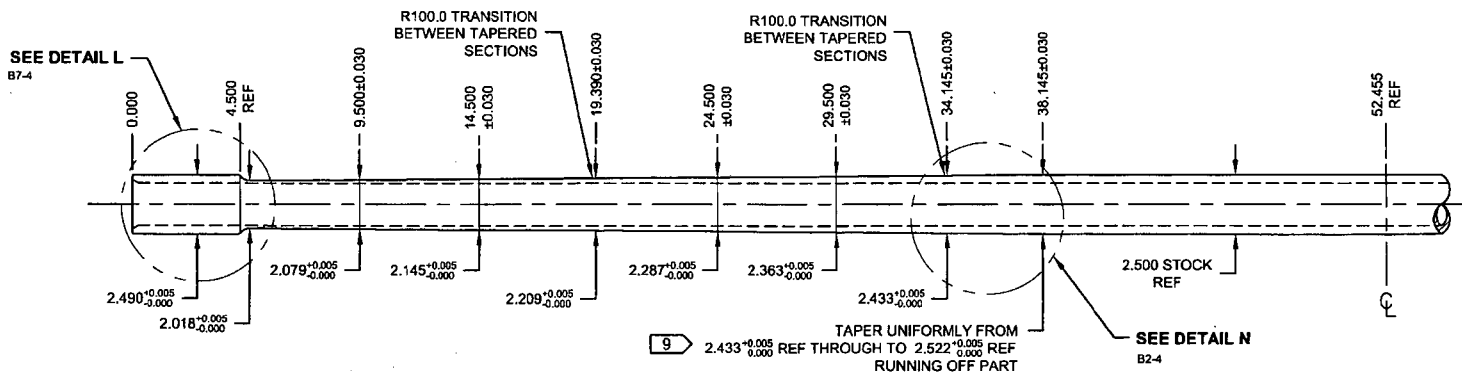
**VIEW C-C:**  
**CUFF DETAIL**  
SCALE 4X

DESIGN	W	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	CP	DRAWING NO.	REV. C
MFG. APPR.	GP	D206-667-243	SHEET 2 OF 4
APPROVED	MP	TITLE	SCALE
DE APPR.	MP	CROSSTUBE ASS'Y (206L HIGH AFT)	NTS
DATE	08.11.06	<small>COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

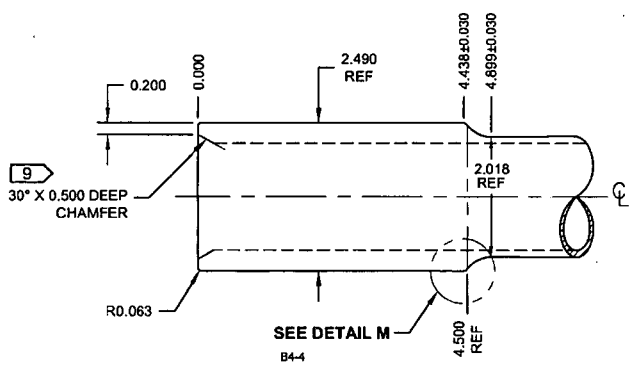




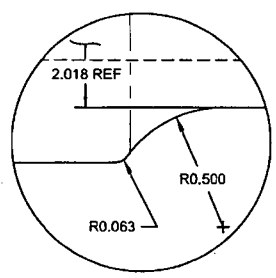
W/O 53649  
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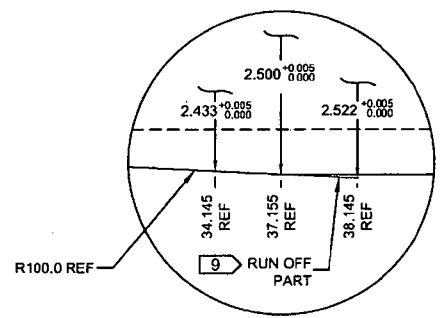
**TURNING DETAIL**



**DETAIL L: CROSSTUBE CUFF**  
NOT TO SCALE



**DETAIL M: CUFF TRANSITION**  
NOT TO SCALE



**DETAIL N: TAPER RUN-OFF**  
NOT TO SCALE

**RELEASED**  
08/11/12

DESIGN	<i>W</i>	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>W</i>	DRAWING NO.	REV. C
MFG. APPR.	<i>W</i>	D206-667-243	SHEET 4 OF 4
APPROVED	<i>W</i>	TITLE	SCALE
DE APPR.	<i>W</i>	CROSSTUBE ASS'Y (206L HIGH AFT)	NTS
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